

CONTINUING EFFORTS IN ADULT IMMUNIZATION

VACCINES have been traditionally associated with protecting young children from childhood diseases. Increasingly, public health programs are focusing on the lifelong benefit that immunization brings. The National Immunization Program is involved in many efforts to protect adults from vaccine-preventable diseases that can affect us throughout life.

NIP CONTINUES TO SUPPORT IMPROVED VACCINATION coverage for adults, including efforts to

- Improve physician and institutional practices for adult immunization
- Identify and overcome barriers to adult immunization that lead to substantially lower vaccination levels in African-American and Hispanic populations
- Connect immunization services to preventive health services for heart disease, asthma, diabetes, breast and cervical cancers, and other diseases
- Identify and prevent missed opportunities for vaccination in healthcare settings, the workplace, and other community areas
- Collaborate with partners to increase hepatitis B vaccination coverage rates among high-risk populations
- Work with partners and stakeholders to implement the 50 recommendations from the National Influenza Vaccine Summit

ENCOURAGING ADULT IMMUNIZATION

ONE OF THE GREATEST PUBLIC HEALTH CHALLENGES is extending the success in childhood immunization to the adult population. Illness caused by vaccine-preventable diseases is expensive in terms of dollars and, more importantly, human lives. Each year we spend many billions of dollars treating adults for vaccine-preventable illnesses, and each year, on average, more than 47,000 adults die from diseases that could have been prevented. (See the *Disease Impact* chart on page 32.) Fortunately, vaccines are available to prevent many potentially debilitating diseases, including influenza, pneumococcal disease, and hepatitis B virus infection. Hepatitis B vaccine provides protection against common causes of liver disease and liver cancer, making it the first vaccine that is effective in preventing cancers.

LONG-TERM CARE FACILITIES OFFER INFLUENZA AND PNEUMOCOCCAL VACCINATIONS TO RESIDENTS

AN ESTIMATED 1.6 MILLION TO 2 MILLION RESIDENTS are in approximately 18,000 nursing homes in the United States. Many are un- or under-immunized against influenza and pneumococcal disease. Based on 1999 CDC data, only 65% and 38% of nursing home residents had received influenza and pneumococcal vaccinations, respectively; the goal is to raise these levels to 90%.

After hearing from CDC and two industry groups—the American Association of Homes and Services for the Aging and the American Health Care Association—the Centers for Medicare and Medicaid Services (CMS) successfully established a new rule this year for influenza and pneumococcal vaccination of nursing home residents. As of October 1, 2005, all U.S. nursing homes enrolled in Medicare/Medicaid programs must provide these vaccinations to all eligible residents unless there is a documented medical contraindication, or they or their families choose not to have the vaccine(s).

“Vaccines against these diseases are effective in preventing hospitalizations and death,” said CMS Administrator Dr. Mark McClellan, “however, many at-risk people are not getting the vaccines they need.” While not specifically required by the new rule, the CMS statement also advised all facilities to provide annual influenza vaccination to their health care workers. CDC is planning to work with CMS to monitor and evaluate these efforts, with data expected to be available for review in mid-2006.

ADULT IMMUNIZATION SCHEDULE

NIP HAS ALSO RELEASED AN ADULT IMMUNIZATION SCHEDULE. First published in 2002, the schedule provides a readable summary of immunization recommendations for adults. The schedule is endorsed by the Advisory Committee on Immunization Practices, the American Academy of Family Physicians, and the American Academy of Obstetricians and Gynecologists. Versions of the schedule have been developed for clinicians and for the general public, available in both Spanish and English. The schedule, which can be downloaded and printed as a full-page document or as a pocket-sized card, can be found in the adult vaccination area of the NIP website at www.cdc.gov/nip/recs/adult-schedule.htm and is found on page 34 of this publication.

USE OF STANDING ORDERS IN NURSING HOMES

IN COLLABORATION WITH THEIR QUALITY IMPROVEMENT organizations, CMS and CDC recently completed a three-year program to promote standing orders for Medicare patients in nursing homes. Data showed that standing orders are both more effective and more cost-effective than other types of immunization programs in nursing homes. In addition, CMS’s Quality Improvement Organizations (QIO) were successful at increasing adoption of standing order programs in the nursing homes in the intervention states versus the control states. The study also demonstrated that signed consent is a major barrier to achieving higher vaccination rates in nursing homes. In response to this study, the American Medical Directors Association revised its tool kit for nursing home vaccination by removing the sample signed consent form. Four peer-reviewed publications have been published summarizing these study findings.



IMPACT OF ADULT VACCINE-PREVENTABLE DISEASES

	INFLUENZA (FLU)	PNEUMOCOCCAL DISEASES (PNEUMONIA, MENINGITIS, BACTEREMIA)	HEPATITIS B
DESCRIPTION	Highly infectious viral illness	Infectious illness caused by a type of bacteria (pneumococci)	A highly infectious disease of the liver caused by hepatitis B virus
SYMPTOMS AND SIGNS	Fever and chills, dry cough, runny nose, body aches, headache, sore throat	<p>Pneumococcal Pneumonia</p> <ul style="list-style-type: none"> Occurs when bacteria invade the lungs Symptoms may include high fever, cough with production of mucus, shaking chills, breathlessness, and chest pain that increases with breathing and coughing <p>Pneumococcal Meningitis</p> <ul style="list-style-type: none"> Occurs when bacteria invade the tissues and fluids surrounding the brain and spinal cord. Symptoms may include headache, stiff neck, fever, mental confusion and disorientation, and visual sensitivity to light. The disease can lead to coma and death. Permanent disabilities among some survivors of the disease include hearing loss (the most common), learning disabilities, mental retardation, seizures, and other sensory or motor problems. <p>Pneumococcal Bacteremia</p> <ul style="list-style-type: none"> Occurs when bacteria invade the blood-stream. Symptoms include fever and fatigue and can be accompanied by pneumonia and meningitis. 	Frequently no symptoms, but if present can include yellow skin or eyes, tiredness, stomachache, loss of appetite, nausea, or joint pain. Hepatitis B can infect people without making them feel sick.
COMPLICATIONS	Pneumonia, exacerbation of chronic illnesses (such as heart and lung diseases), and death	Death. In the U.S., pneumococcal infections are one of the most common causes of death from a vaccine-preventable disease. <i>Additional Dangers</i> —Drug-resistant strains of pneumococcus are common. Almost a fifth of the isolates of pneumococci tested by the CDC in 2003 were resistant to penicillin.	Victims of this disease can suffer from lifelong liver problems such as scarring of the liver, chronic liver disease, and liver cancer.
TRANSMISSION	Contact with an infected person spreading the virus by droplets	Pneumococci are present in many people's noses and throats and, even if not causing illness, they can be transmitted to others through respiratory droplets. It is not known why some bacteria suddenly invade the body and cause disease.	Hepatitis B is spread when someone has contact with the blood of an infected person or has sex with an infected person. <i>This is a highly contagious disease—100 times more contagious than the virus that causes AIDS.</i> Sources of infection are not found for about one-third of those infected with hepatitis B.
IMPACT (in a typical year)	<ul style="list-style-type: none"> Hospitalizations—Over 200,000 (more than 60% are 65 years old or older) Deaths—36,000 annually (more than 90% are 65 years old or older) <ul style="list-style-type: none"> During the 1990s, influenza epidemics caused 239,000 deaths. During the 20th century, three influenza pandemics caused more than 600,000 deaths. Direct medical costs—Over \$2 billion for hospitalized cases alone 	<p>Pneumococcal Pneumonia</p> <ul style="list-style-type: none"> Cases (hospitalized)—100,000 to 135,000 Deaths—12% of those infected with invasive pneumonia (mostly older adults) <p>Pneumococcal Meningitis</p> <ul style="list-style-type: none"> Cases—2,600 Deaths—18% of those infected with meningitis (mostly older adults) <p>Pneumococcal Bacteremia</p> <ul style="list-style-type: none"> Cases—more than 30,000 Deaths—9% of those infected (mostly older adults) 	<ul style="list-style-type: none"> Infections—Approximately 70,000 new infections occur each year, mostly in adolescents and adults. About 6% of these people become chronically infected and face a 15% to 25% lifetime risk of death from chronic liver disease. Deaths—About 1.25 million people in the United States suffer from chronic hepatitis B infection, and each year approximately 4,000 to 5,000 die prematurely from chronic liver disease.

USE OF PNEUMOCOCCAL CONJUGATE VACCINE IN THE ELDERLY

The only pneumococcal vaccine currently licensed for use with adults is the **pneumococcal polysaccharide vaccine (PPV23)**, which provides limited protection for the elderly. NIP and Emory University are planning a clinical trial to determine if protection can be increased with a combination of PPV23 and the new **pneumococcal conjugate vaccine (PCV7)**. This trial will assess the effectiveness of administering a combination of PPV23 and PCV7 given with and without a priming dose of tetanus vaccine. If a combination of vaccines is more effective than PPV alone, studies will be performed to measure how much better a combination protects the elderly from pneumonia. A small-scale pilot study was begun in January 2004; results from this study should be available in 2006.

ASSESSING PROGRESS IN ADULT IMMUNIZATION

ADULT CLINIC ASSESSMENT SOFTWARE APPLICATION

With funding and technical assistance from NIP, the American College of Physicians (ACP) has designed a three-year intervention to increase immunization rates among adult patients at high risk for vaccine-preventable diseases. Interested physicians, along with “immunization champions” from their office staff, participate in a one-day training session for NIP’s Adult Clinic Assessment Software Application (ACASA). Participants leave the training session with a copy of ACASA loaded onto their laptops and then collect baseline immunization data using ACASA when they return to their offices. Using these data, ACP helps each practice pinpoint strengths, weaknesses, and gaps in patient immunizations. Using AFIX*, the NIP model for improving vaccination rates, ACP then works with each practice to increase its immunization rates.

In the first year of the project, ACP delivered customized ACASA data reports to 13 practices. Each of the 13 practices agreed to develop and implement plans to improve immunization rates and to measure progress over a three-year period. In the second and third years of the project, ACP will expand the number of participating practices to 25 per year; by the end of the 3-year period, ACP expects to conduct interventions in up to 70 practices.

NATIONAL INFLUENZA VACCINE SUMMIT

CDC’S NATIONAL IMMUNIZATION PROGRAM and the American Medical Association (AMA) co-sponsored the 2005 National Influenza Vaccine Summit in Chicago, Illinois, in May 2005. The Summit brought together over 150 representatives from over 60 public, private, and non-profit organizations—all stakeholders in the annual effort to administer influenza vaccine to over 185 million high-priority individuals each year.

The summit addressed three major areas of concern experienced in the 2004-2005 influenza vaccination season:

**For more information about AFIX, see the Lifelong Immunization: Childhood section of this report.*

RECOMMENDED
ADULT
IMMUNIZATION
SCHEDULE
BY VACCINE AND
AGE GROUP*

UNITED STATES
October 2005–
September 2006

Vaccine ▼	Age group ►	19–49 years	50–64 years	≥ 65 years
Tetanus, diphtheria (Td) ^{1*}		1 dose booster every 10 years		
Measles, mumps, rubella (MMR) ^{2*}		1 or 2 doses	1 dose	
Varicella ^{3*}		2 doses (0, 4–8 wks)	2 doses (0, 4–8 wks)	
Influenza ^{4*}		1 dose annually	1 dose annually	
Pneumococcal (polysaccharide) ^{5,6}		1–2 doses		1 dose
Hepatitis A ^{7*}		2 doses (0, 6–12 months, or 0, 6–18 months)		
Hepatitis B ^{8*}		3 doses (0, 1–2, 4–6 months)		
Meningococcal ⁹		1 or more doses		

These recommendations must be read along with the footnotes that can be found on the last 2 pages of this schedule.

*Covered by the Vaccine Injury Compensation Program.

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

Recommended if some other risk factor is present (e.g., based on medical, occupational, lifestyle, or other indications)

Approved by the Advisory Committee on Immunization Practices (ACIP),
the American College of Obstetricians and Gynecologists (ACOG), and the American Academy of Family Physicians (AAFP)

This schedule indicates the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons aged ≥19 years. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations, consult the manufacturers' package inserts and the complete statements from the ACIP (www.cdc.gov/nip/publications/acip-list.htm).

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available by telephone, 800-822-7967, or from the VAERS website at www.vaers.hhs.gov.

Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/osp/vicp or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington D.C. 20005, telephone 202-357-6400.

Additional information about the vaccines listed above and contraindications for immunization is also available at www.cdc.gov/nip or from the CDC-INFO Contact Center at (800) CDC-INFO (232-4636) in English, en Español 24 hours a day, 7 days a week.

RECOMMENDED
ADULT
IMMUNIZATION
SCHEDULE
BY VACCINE
AND MEDICAL
AND OTHER
INDICATIONS*

UNITED STATES
October 2005–
September 2006

Indication ►	Pregnancy	Congenital immunodeficiency, leukemia ^a , lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, cerebrospinal fluid leaks, radiation or large amounts of corticosteroids	Diabetes, heart disease, chronic pulmonary disease, chronic liver disease, including chronic alcoholism	Asplenia ^a (including elective splenectomy and terminal complement component deficiencies)	Kidney failure, end stage renal disease, recipients of hemodialysis or clotting factor concentrates	Human immunodeficiency virus ^a (HIV) infection	Healthcare workers
Vaccine ▼							
Tetanus, diphtheria (Td) ^{1*}	1 dose booster every 10 years						
Measles, mumps, rubella (MMR) ^{2*}	1 or 2 doses						
Varicella ^{3*}	2 doses (0, 4–8 weeks)						2 doses
Influenza ^{4*}	1 dose annually			1 dose annually	1 dose annually		
Pneumococcal (polysaccharide) ^{5,6}	1–2 doses	1–2 doses					1–2 doses
Hepatitis A ^{7*}	2 doses (0, 6–12 months, or 0, 6–18 months)						
Hepatitis B ^{8*}	3 doses (0, 1–2, 4–6 months)				3 doses (0, 1–2, 4–6 months)		
Meningococcal ⁹	1 dose			1 dose	1 dose		

These recommendations must be read along with the footnotes that can be found on the last 2 pages of this schedule.

*Covered by the Vaccine Injury Compensation Program.

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

Recommended if some other risk factor is present (e.g., based on medical, occupational, lifestyle, or other indications)

Contraindicated

* Please see accompanying footnotes in the Annex of this publication.

Approved by the Advisory Committee on Immunization Practices (ACIP),
the American College of Obstetricians and Gynecologists (ACOG), and the American Academy of Family Physicians (AAFP)

- The lack of knowledge, indifference and/or frustration in the general public, priority persons and healthcare providers, addressing:
 - managing changing communications messages
 - managing different challenges facing immunization efforts during the upcoming 2005-2006 influenza vaccination season
 - driving increased vaccine uptake (extending the vaccination season), and
 - CMS efforts
- The stability of the influenza vaccine supply, and
- Enhancing influenza vaccine crisis planning in the areas of communications/promotions, avian/pandemic preparedness, and an international perspective for pandemic influenza

The following primary action steps were proposed following the 2005 Summit:

- Hire full-time staff for the Summit
- Create and deliver a simple, unified communications campaign on influenza vaccination to:
 - commit to promoting vaccination widely and with a unified, audience-researched message
 - develop a plan to promote vaccination into December and beyond
 - develop a Summit-supported universal vaccination message with priority group messages up front
 - encourage practitioners to extend access to their patients
 - educate healthcare professionals as well as their patients
 - establish routine influenza immunization for healthcare providers
 - educate for the first time the public about influenza cases with negative outcomes
 - promote live inactivated influenza vaccine to eligible individuals such as healthcare workers and school-aged children, and
 - use culturally appropriate messages and methods to reach underserved communities such as African Americans and Hispanics
- Work with the ACIP to simplify the influenza vaccine use recommendations
- Comment on the HHS Pandemic Planning Response and Participation Plans

2005-2006 INFLUENZA VACCINE SEASON

FOR THE 2005-2006 INFLUENZA SEASON, four manufacturers provided influenza vaccine in the United States: Chiron, GlaxoSmithKline, MedImmune, and sanofi pasteur. By January 2006, more than 80 million doses were distributed, and it is estimated that approximately 86 million doses were produced. Despite the total number of doses available, however, a delay in delivery occurred, and a decreased production of vaccines by one of the manufacturers resulted in a mismatch between supply and demand for influenza vaccine at the height of the vaccination season. This mismatch left a number of providers, facilities such as hospitals and long term care facilities, and vaccine distributors without sufficient vaccine.

To assess the extent of this mismatch, CDC performed systematic assessments of vaccine supply problems experienced by various key stakeholders, including state and local public health officials, private providers, other providers and facilities who

administer influenza vaccine, the public, and vaccine distributors, to understand the extent and duration of problems associated with vaccine supply and access to influenza vaccine this season. CDC also took steps to assess consumer demand for vaccine during the 2005-2006 influenza vaccination season. CDC surveyed physicians, hospitals, immunization grantees, community vaccinators, health departments, pharmacists, and others to better understand which providers had been affected by the influenza vaccine supply problems and to what extent. The information collected will help CDC evaluate and respond to challenges in the current influenza season and to plan for future seasons.

As part of its systematic assessment, CDC and AMA co-hosted more than 200 private and public health providers, vaccine manufacturers, and professional medical and health organizations for the fifth annual National Influenza Vaccine Summit. Summit participants met to review the 2005-06 influenza season to date, to identify and assess influenza vaccine ordering and distribution issues and vaccination activities undertaken in 2005-06, to discuss issues experienced during the 2005-06 influenza vaccination season, and to develop vaccination strategies and activities that could be implemented for future influenza seasons to foster effective use of influenza vaccines and high immunization rates. The National Influenza Vaccine Summit will issue recommendations to CDC on several topics including supply and distribution, communications, and improving vaccine demand.

Through CDC's Secure Data Network, CDC made available summary reports of influenza vaccine distribution data for the 2005-2006 influenza season. To aid the visibility of influenza vaccine distribution, CDC coordinated agreements with several distributors and one manufacturer to provide influenza vaccine distribution information to the ZIP-code level by type of provider on a weekly basis. This information was consolidated and mapped to common variables for reporting and then published to a secure environment in order to aid public health officials with the influenza vaccine season.

Throughout the year, CDC works with the ACIP to develop vaccine recommendations and to promote awareness and adoption of influenza vaccination recommendations through provider resources, patient and public education materials, media updates and public campaigns. Through the Section 317 program and the VFC Program, CDC distributes federal funds to states, territories, and some cities to purchase influenza vaccine. CDC also develops for this purpose vaccine contracts, on which states can purchase additional influenza vaccine with their own funds. CDC also creates and maintains the pediatric influenza vaccine stockpile (purchased through VFC funds) that provides a late-season strategic reserve of influenza vaccine.

CDC recognizes that it is necessary to ensure an enhanced and stable domestic influenza vaccine market to improve the response to both annual and pandemic influenza. CDC continually works to improve our response to vaccine shortages and to other unusual situations. We will continue to work with private industry manufacturers and our international partners to find solutions to the challenges we face related to influenza vaccine supplies.

Influenza Vaccine Supply Management

SUPPLY

SUCCESS

STORY

On October 5, 2004, CDC was notified by Chiron Corporation that none of its inactivated influenza vaccine (Fluvirin®) would be available for distribution in the United States for the 2004–05 influenza season, eliminating 46–48 million of an expected 100 million doses of inactivated vaccine. In coordination with the ACIP, CDC issued interim recommendations to direct available inactivated influenza vaccine to persons in certain priority groups. Over 21 million doses of vaccine were distributed between the time the shortage was announced in October and late December. An initial 13.5 million doses were allocated by CDC and Aventis Pasteur to complete orders for providers who care for children, hospitals, long-term care facilities, the Department of Veterans' Affairs, and the Indian Health Service, and to fill partial orders for community vaccinators, primary care providers and specialists, and public health departments. HHS Secretary Thompson also negotiated the purchase of an additional 1.2 million doses of inactivated vaccine licensed in Europe for investigational use in the United States. Data collected by CDC in November and December indicated that persons in influenza-vaccine priority groups were receiving vaccine at higher rates than non-priority groups, and persons in non-priority groups had largely deferred influenza vaccination during the 2004–05 season. These data also indicated that the vaccination coverage rate in children aged 6–23 months was almost 37% as of December 2004. Because the 2004–05 influenza season was the first time the vaccine had been recommended for this age group, this level of coverage was a remarkable achievement.

As the flu season progressed, demand for vaccine by priority groups had been met in some areas, and additional supplies of vaccine became available. In response to these changed conditions, on December 24 CDC and ACIP released an update to the 2004–05 interim recommendations, which allowed vaccination not only for the priority groups defined on October 5 but for out-of-home caregivers and household contacts of persons in high-risk groups, and to all adults aged 50–64 years where vaccine supply was sufficient. However, mid-season vaccine coverage estimates among adults in priority groups were below estimates from the 2003–04 season. As 2005 began, ongoing efforts were needed to vaccinate persons in priority groups. CDC continued to work with Aventis Pasteur, Inc. to distribute the remaining supply of its inactivated influenza vaccine Fluzone® so that it reached persons in the priority groups.



2004/
2005